

This is a repository copy of *Video Showcase : Using Expressy to Showcase Expressiveness in Touch-based Interactions*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/94842/>

Version: Published Version

---

**Proceedings Paper:**

Wilkinson, Gerard, Green, David, Wood, Gavin et al. (7 more authors) (2016) Video Showcase : Using Expressy to Showcase Expressiveness in Touch-based Interactions. In: CHI EA '16 Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems. ACM Conference on Human Factors in Computing Systems 2016, 07-12 May 2016 CHI EA '16 Proceedings of the 2016 CHI Conference Extended Abstracts on Human Factors in Computing Systems . ACM , USA .

---

**Reuse**

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.

---

# Video Showcase: Using Expressy to Showcase Expressiveness in Touch-based Interactions

**Gerard Wilkinson<sup>1</sup>**  
**David Philip Green<sup>1</sup>**  
**Gavin Wood<sup>1</sup>**  
**Ahmed Kharuffa<sup>1</sup>**  
**Jonathan Hook<sup>2</sup>**  
**Bradley Pursglove<sup>1</sup>**  
**Hendrik Haeuser<sup>1</sup>**  
**Nils Y. Hammerla<sup>1</sup>**  
**Steve Hodges<sup>3</sup>**  
**Patrick Olivier<sup>1</sup>**

<sup>1</sup>Open Lab, Newcastle University  
Newcastle upon Tyne, UK  
{g.wilkinson, d.p.green}@newcastle.ac.uk

<sup>2</sup>Department of Theatre, Film and  
Television, University of York  
York, UK  
jonathan.hook@york.ac.uk

<sup>3</sup>Microsoft Research  
Cambridge, UK  
shodges@microsoft.com

## Abstract

We present a video demonstration of how information about hand movements, generated from a wrist-worn IMU (inertial measurement unit), can be used to provide expressiveness to touch-based interactions. The IMU identifies features that were not previously accessible, such as instantaneous force, wrist roll and

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored. For all other uses, contact the Owner/Author.  
Copyright is held by the owner/author(s).  
*CHI'16 Extended Abstracts*, May 07-12, 2016, San Jose, CA, USA  
ACM 978-1-4503-4082-3/16/05.  
<http://dx.doi.org/10.1145/2851581.2889432>

pitch. We demonstrate a range of applications that have been extended using Expressy, a system we describe in more detail in the full paper [1]. Tap force allows users to express their intent behind an interaction before touch. Wrist roll and pitch enriches the touch during the interaction. Flick force and wrist roll allows users to follow-up their touch interaction.

## Author Keywords

Expressive interaction; intentionality; expressiveness; IMU; smart watch; touch interaction.

## ACM Classification Keywords

H.5.2 [User Interfaces]: Input devices and strategies, Interaction styles.

## Acknowledgements

This work was funded by EPSRC awards EP/L505560/1 (BBC iCASE 2014), EP/G066019/1 (Creative Exchange), EP/M023001/1 (Digital Economy Research Centre) and EP/M023265/1 (The Digital Creativity Hub), and the British Broadcasting Corporation.

## References

1. Wilkinson, G., Kharuffa, A., Hook, J. et al. Expressy: Using a Wrist-worn Inertial Measurement Unit to Add Expressiveness to Touch-based Interactions. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems* (CHI '16).  
<http://dx.doi.org/10.1145/2858036.2858223>